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Nota di contenuto	Cover -- TTitle Page -- Copyright Page -- Contents -- Introduction -- Chapter 1. Mathematical Background -- 1.1. Basic properties of random variables -- 1.2. Moments of random variables and related quantities -- 1.3. Laplace transformation -- 1.4. z transform -- 1.5. Matrix functions of quadratic matrices -- 1.6. Matrix inverse -- 1.7. Eigenvalues and the characteristic polynomial -- 1.8. Spectral decomposition -- 1.9. Ordinary differential equation of vector functions -- 1.10. Exponential distribution -- 1.11. Erlang distribution -- 1.12. Discrete time Markov chain -- 1.13. Continuous time Markov chain -- 1.14. Kronecker algebra -- Chapter 2. Continuous Phase Type Distributions -- 2.1. Definition and basic properties -- 2.2. Stochastic meaning of $(-A)^{-1}$ -- 2.3. Rational Laplace transform -- 2.4. Decomposition of matrix exponential functions -- 2.5. Similarity transformation -- 2.5.1. Similarity transformation with identical sizes -- 2.5.2. Similarity transformation with different sizes -- 2.5.3. Full rank representation -- 2.6. Closure properties

This book, authored by András Horváth and Miklós Telek, delves into the theoretical foundations and applications of phase type distributions in stochastic models, with a particular focus on computer science and network systems. It presents a comprehensive overview of mathematical concepts such as random variables, matrix functions, Markov chains, and differential equations, essential for understanding phase type distributions. The authors aim to provide readers with a detailed understanding of both continuous and discrete phase type distributions, their properties, and applications. This work is intended for researchers, academics, and professionals in the fields of mathematics, computer science, and engineering who are interested in stochastic modeling and its applications.
